

**IN THE SPECIFICATION:**

**Page 1, before the first paragraph, insert and center**

BACKGROUND OF THE INVENTION.

**Page 2, between the third and fourth full paragraph, insert and center**

SUMMARY OF THE INVENTION.

**Page 4, between the twelfth and thirteenth paragraphs, insert and center**

BRIEF DESCRIPTION OF THE DRAWINGS.

**Page 5, between the first and second paragraphs, insert and center**

DETAILED DESCRIPTION OF THE INVENTION.

**Page 5, third full paragraph, delete in its entirety, and replace with the following**

**paragraph:**

B<sup>1</sup>

The first step (Figure 1A) shows a sensor 1 at the surface 2 of which an oligonucleotide 3 is immobilised by its end 3'. This oligonucleotide 3 is more generally designated "detection molecule 4". This immobilisation may be effected either by a suitable treatment of the sensor surface to allow a covalent link to be established with end 3' of oligonucleotide 3, or by a thermochemical method or by a photo-immobilisation technique by means of a polymerisable cross linking agent, as will be explained in more detail in the following examples. This detection molecule includes a specific nucleotide sequence which, via hybridisation (Figure 1B) will allow an elementary strand 5 of the biochemical entity 6 to be analysed to be immobilised, this elementary strand having a complementary nucleotide sequence to that of detection molecule 4.

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B1  
cont.  
This hybridisation is effected by leaving end 3' of elementary strand 5 free. In the next step (Figure 1C), monomer nucleotides 7 have been added, hereinafter designated by the usual abbreviation dNTP, and an enzyme 10, such as a transferase at end 3'. This enzyme 10 will specifically catalyse the formation of covalent links between end 3' of elementary strand 5 and successively the nucleotides added to the medium to create a polymer chain formation 9 which will increase the total mass at the surface, which will mean a measurable variation in the refractive index. In the event that the nucleotides added to the medium are labelled with a fluorescent label, this increase in mass will ~~means~~ mean an accumulation of labelled nucleotides at the surface of the sensor and a global decrease in fluorescence in the medium.

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